A study of the adoption of Digital Financial Services and its Impact on financial behavior of the users: A study of Agra District

Synopsis

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Submitted by

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Section 1: Introduction

In the past few decades, rapid digitization and digital transformation in the financial service sector have led banks and financial institutions around the world to adopt digital ways of providing or receiving financial services. Financial products and services delivered digitally are more accessible and affordable than traditional banking services, and customers increasingly prefer digital transactions over cash-based transactions. Digital finance has provided an innovative way for the bank to reach new customers. Hence, many banks and non-banks have also begun to offer digital financial services to reach those customers. According to **a McKinsey report**, a "digital finance" is a financial service delivered via mobile phones, the internet, or cards.

1.1 Digital Finance: - Digital finance consists of a wide range of formal financial services, including payments, deposits, credit access, savings, insurance, and remittances, which are delivered to customers through internet banking, mobile banking, credit cards, debit cards, e-wallets, ATMs, etc. **According to Gomber, Koch, and Siering (2017),** digital finance encompasses a magnitude of new financial products, financial businesses, finance-related software, and novel forms of customer communication and interaction - delivered by Fintech companies and innovative financial service providers. Digital financial services can be more convenient and affordable than traditional banking services only when the individual has access to a smart phone and internet connectivity. Digital financial services have several benefits for customers. Access to digital financial services enables individuals to secure their cash digitally instead of keeping money at home and travelling with it. Digital financial services enable low-income groups or poor customers in developing countries to save and borrow more conveniently at an affordable cost in the formal financial system of the country **(Tabitha Durai & Stella, 2019).** Various players are involved in providing digital financial services to customers, such as mobile network operators, banks and financial institutions, fintech companies, telecom service providers, regulators, agents, and retailers. The providers of digital financial services for delivering financial services to customers primarily depend on three components:

1. A digital transactional platform.
2. Customer access devices.
3. An agent networks.

1.2 Components of Digital Financial Services Model (CGAP, 2015)

1. Transactional platforms: These are the platforms that enable customers to use a device to make or receive payments and transfers, as well as to store value electronically with a bank or a non-bank that is permitted to store electronic value.

2. Devices: Which are used by the customer in making or receiving payments and transmitting or receiving transaction data. These can either be digital devices such as a mobile phone or laptop, or they can be physical instruments such as payment cards etc. that connect to a digital device.

3. Retail agents: Retail agents enable customers to convert cash into electronically stored value and then transfer that value back into cash. The retail agents have digital devices connected to communication infrastructure for transmitting and receiving transaction details. **(**CGAP, 2015)

Digital finance has several benefits for individuals, the government, financial service providers, businesses, and the economy. In developing countries, digital finance enables poor individuals to easily use and access basic banking and financial services at an affordable cost. Improvements made in the availability and accessibility of digital financial services by the governments of various countries around the world can help low-income groups and new customers adopt digital transactions. Digital finance assures to boost the gross domestic product of the economies that have adopted digital technology in the financial sector by providing convenient and affordable banking and financial services to individuals as well as small, medium, and large enterprises, which can increase the overall expenditure and thereby improve the GDP levels of the digitized economy. Digital finance can also lead to greater economic stability and increased financial intermediation, both for customers and for the economy where they and their families reside **(Peterson K. Ozili, 2018).** Digital finance also benefits governments by providing a platform to facilitate increase in aggregate expenditure which subsequently generates higher tax revenue arising from increase in the volume of financial transactions **(Manyika et al., 2016).**

1.3 Digital financial services in India

During the year 2012, we experienced rapid growth in the digital payment system. Government legislation and policy changes, technological developments, the widespread adoption of mobile phones, and the availability of low-cost internet services have all contributed to significant growth in digital payments such as m-wallets, debit and credit cards, net banking, and so on. The

Government of India has made significant efforts to promote digital financial services. The Pradhan Mantri Jan Dhan Yojana was launched in August 2014 by the government of India with the purpose of providing basic banking and financial services to unbanked households. As a result, 17.90 crore zero-balance accounts were opened during the first year of the scheme, the Pradhan Mantri Jan Dhan Yojana (August 2015), which has been increased by 46.25 crore by the year 2022, according to the ministry of finance (**Public Information Bureau 28 August 2022)**. With the significant increase in individual bank account openings, the Jan Dhan account has been linked with Aadhaar. The Jan Dhan account, Aadhar card, and mobile connection are all linked together in the JAM strategy to transfer benefits directly into the accounts of the beneficiaries. According to the ministry of finance, 5.4 crore PMJDY account holders received direct benefit transfers (DBT) from the government in June 2022. In the year 2016, Government of India launched various digital payment channels such as Unified Payments Interface and Bharat Interface for Money by National Payments Corporation of India to attract customers towards digital financial services. Policies like digital India in 2015 and demonetization in 2016 have created a significant rise in the usage of digital payment, mobile banking, and digital financial services. **According to the NPCI and RBI report of 2016–2017**, In March 2017, the total value of electronic transactions in India increased to ₹149.58 lakh crore from ₹94 lakh crore in November 2016. Digital Finance Status in India as per the report of the World Bank for 2022, 79.8% of the population aged 15 and above has an account with a financial institution in India. 3.0% of the population aged 15 and above owns a credit card. 2.0% of the population aged 15 and above has a mobile money account. 28.7% of the population aged 15 and above made or received digital payments in the last year. 5.3% of the population aged 15 and above used online banking in the last year **(Digital India 2022, Kepios, Feb 2022).** A variety of digital financial services are currently offered in India including M-wallets, Internet Banking, mobile banking, ATMs, credit cards and debit cards, point of sale (POS).

1.4 Types of Digital Financial Services in India

1.4.1 Cards These are issued by the banks to their customers for transaction purpose.

Debit cards- These cards are issued by the bank to the account holder. Users can withdraw an amount of cash up to the amount present in their bank account by using this card, and then their account is instantly debited after any expenditure made by them.

Credit cards- Credit cards are issued by banks and financial institutions to card holders with the purpose of withdrawing funds in excess of the balance available in their bank accounts, with the condition that the card holders have to repay such an amount of funds along with the interest rate to the issuer of the card after a specified time period.

1.4.2 Aadhar enabled payment system:

Aadhar-enabled payment system (AEPS) is a payment system launched by the national payments corporation of India in the year 2016 to facilitate payment services. AEPS allows a bank customer to execute basic banking services such as balance enquiry, cash withdrawal, cash deposits etc. through micro-ATMs by verifying with the help of their Aadhar number and their finger print.

1.4.3 Unified payment Interface:

Unified Payments Interface is an online payment system developed by the National Payment Corporation in the year 2016 that allows users to transfer money instantly by using a single window mobile application between two bank accounts. RBI regulates the payment services of UPI.

1.4.4 E-wallet:

An e-wallet is a kind of digital wallet which is used for online transactions through a mobile phone and computer. It is used in the same way as debit and credit cards for making online transactions such as online purchases, bill payment, recharge, ticket booking, money transfer, etc. A user's bank account needs to be linked with an e-wallet to make payments for online services. The e-wallet is only used for online payment when the user deposits money into it and then uses the available funds for online transactions, which is known as prepaid services.

1.4.5 Mobile Financial Services

Mobile financial services, in which mobile phones are used to perform financial transactions and access financial services.

Mobile Banking- Mobile banking refers to the use of a smart phone to conduct financial transactions and access all banking services. Mobile banking allows users to use a mobile device to use and access all traditional banking services.

M-Money - also called mobile payment, refers to the use of a smart phone to execute electronic transactions.

1.4.6 Internet banking

Internet banking is also referred to as online banking. Customers can perform and execute banking and financial transactions electronically through the use of the internet. Customers use the bank's website to execute these transactions online.

1.5 Financial Behaviour

According to Perry and Morris, financial behaviour is defined as the management of a person's savings, expenditures, and budget.

Whereas Xiao 2008 asserts that human activities related to money management, such as cash, savings, and credit, are regarded as financial behaviour.

In a wider view, financial behaviour includes broad concepts including investment behaviour for the short- and long-term, savings behaviour, credit usage, expenditure behaviour, etc.

Section 2: Review of literature and Identification of Research Gap

Review of Literature

A review of the literature was conducted to comprehend the broad concepts of digital financial services and the factors affecting the adoption of digital finance.

Classification of Literature Review: A broad classification of the previous papers is given as follows: (Refer Figure 1)

2.1 Focus of the paper

2.1.1 Digital finance

The purpose of the first classification of the literature is to comprehend the overview of digital finance as well as the factors affecting the adoption of digital financial services. Banks and financial institutions have made huge investments in digital technology in order to reduce costs and increase the performance of their businesses, as the adoption of digital financial services is positively associated with the performance of the firm, profitability of the bank, and cost effectiveness. Therefore, all the factors related to the adoption of digital finance have been reviewed. The factors include perceived usefulness, perceived ease of use, and subjective norms **(Sushant Raj and Subodh, 2020).** According to the study, factors such as easy interbank account facilities and accurate timing have a positive impact on the usage of mobile banking, whereas accurate timing and low charges for services have a significant impact on

the usage of mobile wallets (**Tabitha Durai & Stella G, 2019)**. Some of the important reasons for using digital banking services include checking online balances, ensuring safety and security, convenience, and making online bill payments **(Karthik& Krishnan, 2019)**. Security and privacy, communication and responsiveness, dependability and usability, trust and openness, and innovation are several important factors influencing the usage and adoption of mobile banking apps **(Tater and John, 2023).**

2.1.2 Adoption of digital financial services

In this section, an attempt is made to review the awareness, access, usage and level of adoption of various types of digital financial services. In India, the government, financial service providers, and banks have encouraged customers to use digital financial services to make cash transactions seamless. In India, the government initiated the Digital India campaign in 2015 and Demonetization in 2016 to persuade customers to adopt digital financial services. According to the RBI report, the total volume of non-cash transactions reached 1.9 billion in 2016–17, with the launch of the Digital India campaign and Demonetization. Adoption of digital finance by the customer not only helps them to make all the payments digitally, but it also helps them to meet their financial needs and provide solutions for their financial issues. There are different providers and users of digital financial services. Students and employed people use digital banking services more than unemployed people because unemployed people are unaware of digital financial services and feel insecure using them; they find it difficult to adopt digital banking services **(S.J. Syed Ashik, 2020)**. Customers' main sources of information about cashless payments are advertisements, news articles, and news reports. Debit cards, mobile banking, and online payment systems are the types of cashless payment options most commonly used by customers **(Jose, Shruti, 2020).** Retailers use digital payment for the acceptance of payment from their customers; awareness level about digital payment options in the case of plastic money is 100% among the retailers, but they do not have adequate information about the Aadhaar-enabled payment system **(Mohana Priya M, 2021).**

2.1.3 Impact of mobile banking services on savings, spending behaviour

Mobile money usage helps individuals save for health emergencies. Mobile money use increases easy access to cash, and individuals use it to save for unexpected events such as medical emergencies **(Serge KY, Clovis Rugemintwari, and Alain Sauviat, 2017)**. Mobile accounts enable users to avoid wasteful

expenses and to save rather than spend, thus inculcating better savings habits. Mobile account users save money frequently and in small amounts **(Mani A. Nandhi, 2012–2017)**. A study examining the impact of mobile banking services on the spending and savings behavior of university students in Africa found that savings behavior has a strong positive relationship with mobile banking services, as students can easily put their funds into savings accounts and earn interest on their deposits over a set period of time. It has also been found that mobile banking services have a positive correlation with university students' spending behavior because students use mobile banking services to make purchases, which increases their spending rate **(Gitau, Antony Njenga, 2018).** The use of mobile money significantly increases the propensity of low-income earners to save for both emergencies and future events **(Jackline Mwende Skogqvist, 2019).** The adoption of mobile financial services increases investing, purchasing insurance, and borrowing from formal financial institutions. The use of mobile financial services also helps close the gender gap in financial inclusion **(Shreya Biswas, 2021).**

2.2 Context of the paper

Indian

Foreign

2.3 Type of Data for analysis

Qualitative

Quantitative

2.4 Research Type

The fourth categorization of the literature review was done on the basis of the research methodology used by the authors, in studies related to adoption of digital financial services. This will provide some insights on the nature of work done in this field. The researchers who used the following research design in their study include:

2.4.1 Exploratory Research

2.4.2 Descriptive Research

2.4.3 Explanatory Research

2.4.4 Empirical Research

The present study is descriptive in nature.

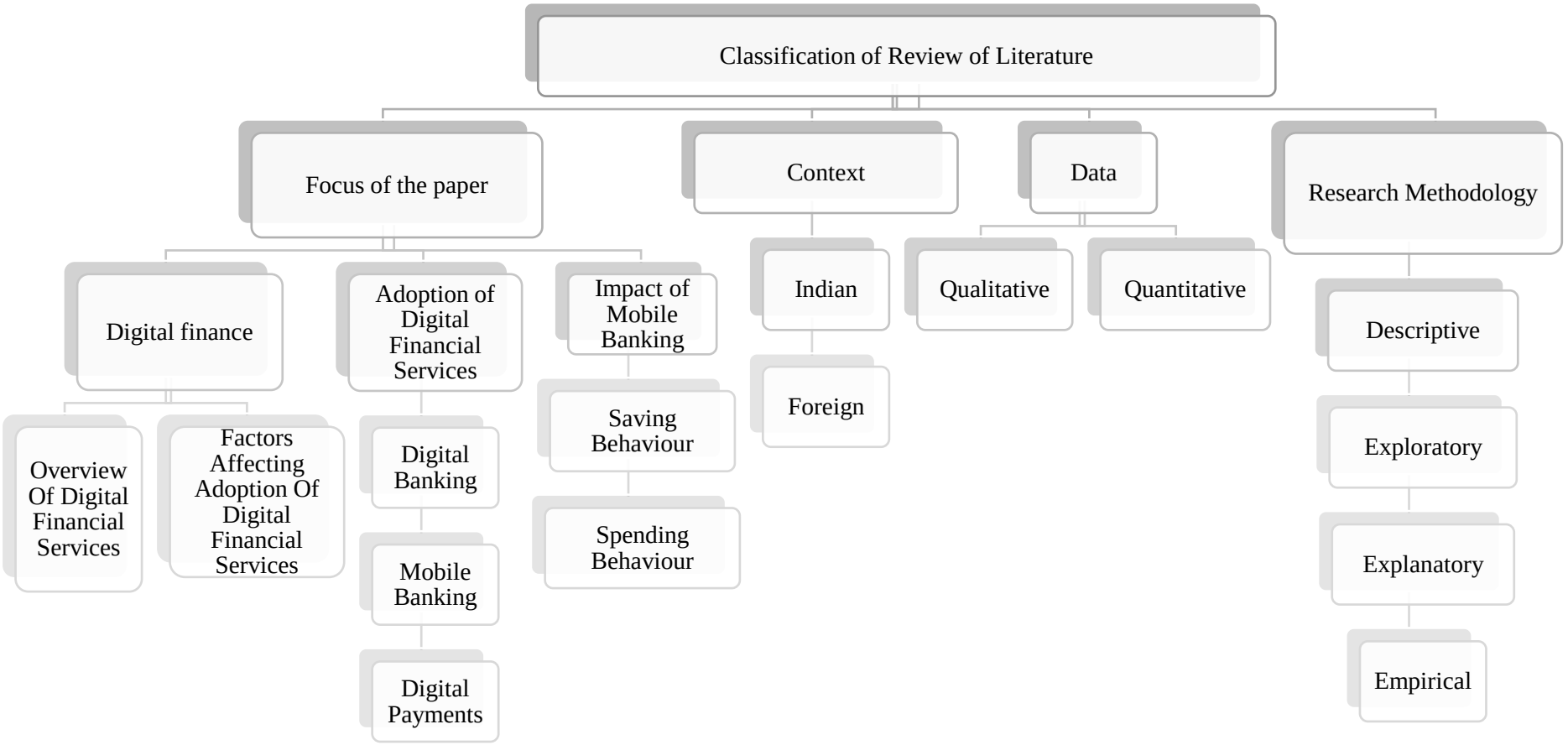

Figure 1: Classification of Review of Literature (Source: Researcher's own construction)

Table 1: Summary of Literature Review

Title Author(s) (Year)	Category	Focus Issue			Context		Data Type		Methodology				Findings
		Digital finance: Factors affecting adoptions of digital financial services	Adoption of digital financial services	Impact of the adoption of mobile banking services on savings, spending behaviour	Indian	Foreign	Qualitative	Quantitative	Exploratory	Explanatory	Empirical	Descriptive	
Mobile banking adoption of the youth market (Ulun Akturan and Nuray Tezcan, 2012)	Research Article	✓	✓		✓								It was found that attitude is the major determinant of mobile banking adoption intention and that it is directly affected by perceived usefulness, perceived social risk, perceived performance risk, and perceived benefit.
The effect of mobile banking on saving culture-a case of residents of molo town (Ng'Ang'A Joyce Mumbi, 2013)	Research Paper			✓		✓						✓	The use of mobile banking improved the savings culture of the residents of Molo Town. They found it easy to save using mobile banking as compared to traditional banking.
Factors Affecting Customer's Adoption of Mobile Banking Services (Amola Bhatt and Shahir Bhatt, 2016)	Research Article	✓			✓							✓	Time effectiveness, convenience, and safety are the critical variables affecting the usage of mobile banking services.
Determinants of Digital Financial Services: A review of literature (Dr. Kamini Rai, 2017)	Review Article	✓			✓								In this article, secondary data was used to understand the different dimensions of digital financial services in India.
Digital Payments Adoption: An Analysis of Literature (Pushp P. Patil, Yogesh K.	Review Article	✓				✓							The author identified the various drivers and inhibitors behind the adoption of digital payments and found that performance

Dwivedi and Nripendra P. Rana, 2017)													expectancy and perceived usefulness are the most significant determinants of consumers' intentions to use mobile payments. Perceived risk was found to be a major inhibitor to the adoption of mobile payments.
Adoption of Digital Banking in India (Bilal Ahmad Sheikh, 2017)	Research Article		✓		✓								The study's findings reveal that the occupational status of banking customers significantly influenced the adoption of digital banking services. Customers working in MNCs were found to be high adopters of digital banking services.
Factors influencing consumers' adoption of mobile financial services in Tanzania (Amina Abdinoor and Ulingeta O.L. Mbamba, 2017)	Research Article	✓				✓		✓		✓			The findings of the study show that individual awareness, perceived usefulness, and perceived benefit are all positively related to the adoption of mobile financial services. but cost effects are negatively related to mobile financial service adoption.
Effects of Mobile Banking on the Savings Practices of Low-Income Users - The Indian Experience (Mani A. Nandhi, 2012-17)	Research Article			✓	✓								Mobile accounts allow users to save instead of spend and avoid unnecessary expenses, thus helping them develop better savings habits. Users can save a small amount of money regularly by using their mobile accounts.
Does mobile money affect saving behavior? Evidence from a developing country (Serge Ky, Clovis Rugemintwari and Alain Sauviat, 2017)	Research Article			✓		✓						✓	The use of mobile money helps individuals save for health emergencies. It also helps individuals access cash easily and save for uncertain events, such as health emergencies.
An Overview of Digital Financial Services in India (Mohammed Farzana Begum, 2018)	Research Article	✓			✓		✓					✓	In the study, the author used secondary data. The authors described the various types of digital financial services offered by the banks and financial service providers in India and the benefits of these services to customers.

Determinants of customers intentions to adopt banking channel innovations in India (V Priyadarshini, 2018)	Research Paper	✓			✓			✓				✓	Perceived usefulness and perceived ease of use were found to be the main determinants of the intention to adopt the Immediate Payment Service (IMPS) and mobile wallets. Social influence was not found to be a significant determinant in the adoption of both IMPS and mobile wallets.
Effects of mobile banking services on the financial behaviour of university students: a case of united states international university-Africa (Gitau, Antony Njenga, 2018)	Research paper			✓		✓						✓	Mobile banking services have a positive correlation with university students' spending behaviour because students use mobile banking services to make purchases, which increases their spending rate
The effect of mobile money on savings behaviors of the financially excluded (Jackline Mwende Skogqvist, 2019)	Review Paper			✓		✓							Mobile money use significantly increases the propensity of low-income individuals to save for both immediate needs and future events.
A Study on Digital Banking System with Reference to Karnataka (Karthik K R, 2019)	Research paper	✓	✓		✓			✓	✓				Some of the important reasons for using digital banking services include checking online balances, ensuring safety and security, convenience, and making online bill payments
A Study on Adoption of Digital Banking in India (S. J. Syed Ashik, 2020)	Research Article		✓		✓			✓				✓	Students and employed people use digital banking services more than unemployed people because unemployed people are unaware of digital financial services and feel insecure using them; they find it difficult to adopt digital banking services
A study on the adoption of digital financial services in service sector organizations (Shailesh Ramratan Vaishnava ,2020)	Research Paper	✓			✓								The study was done in Nagpur to study digital financial services adoption in different service sector organizations, and it was found that in all the sectors, employees are engaged in online transactions. It was

													also found that all the operations in the oil and gas industry are highly dependent on the cashless economy
Adoption of digital banking technology and financial performance of commercial banks in Kenya (Ouma Stephen Otieno, 2020)	Research Paper		✓			✓		✓				✓	The adoption of technology for digital banking by the banks improved their liquidity, deposit, and withdrawal positions.
Adoption of digital banking technology and financial performance of commercial banks in Kenya (Ouma Stephen Otieno& Dr. Fredrick W.S. Ndede, 2020)	Research Article		✓			✓						✓	The adoption of digital banking technology by the banks improved their liquidity position.
Influence of mobile apps on household saving-pending Behaviour (Rajat Deb, 2020)	Research Article			✓	✓			✓				✓	The study attempted to determine the impact of mobile app use on household spending and saving behaviour and concluded that the use of mobile apps had a significant effect on household spending and savings.
Adoption of cashless payment systems among consumers (Jose and Shruti,2020)	Research paper		✓		✓			✓				✓	Customers' main sources of information about cashless payments are advertisements, news articles, and news reports. Debit cards, mobile banking, and online payment systems are the types of cashless payment options most commonly used by customers
Determinants of Mobile Payment Adoption among Urban Users (Pradheep Balaji. R, 2020)	Research paper	✓			✓			✓	✓			✓	The findings of the study demonstrate that the significant determinants for the use of mobile payments are effort expectancy, facilitating conditions, and performance expectancy.
Factors Affecting the Adoption of Digital Payment Systems (Sushant Raj Giri and Subodh Kumar Ghimire, 2020)	Research Paper	✓				✓		✓	✓				All the factors related to the adoption of digital payments were studied. The factors include perceived usefulness, perceived ease of use, and subjective norms.

Adoption and Usage of Mobile Payment Systems by Consumers and Merchants (Sonal, 2021)	Research paper		✓		✓			✓				✓	Paytm was found to be the most usable payment app among merchants and customers. Merchants use mobile payments mainly for sales transactions.
Adoption of digital banking channels in an emerging economy: exploring the role of in-branch efforts (Simran Jit Kaur, Liaqat Ali, M. Kabir Hassan, Md Al-Emran, 2021)	Research Article		✓		✓		✓						In-branch communication with customers, the digital transformation of the branch, and the defined role of branch staff have the potential to migrate customers from branch banking to digital banking.
Adoption of Digital Payment System by Consumer: A review of Literature (Gourab Ghosh, 2021)	Review Article		✓		✓								In the paper, the author describes the various methods of digital payments and also explains the various initiatives taken by the government of India to promote a cashless economy.
Influences of Mobile Payment Usage on Financial Behaviors (Chih-Feng Liao, and Chun-Da Chen, 2021)	Review Article			✓		✓		✓			✓		The study used the National Financial Capability Study 2015–2018 data to analyse the impact of mobile payment usage on financial behaviour and found that mobile payment usage is negatively associated with positive financial behaviour. In this study, positive financial behaviour outcomes were considered, such as not having an overdraft, spending less than income, and not having difficulty covering expenses.
Digital Financial Inclusion Report BRICS 2021	Report	✓			✓								The report highlighted that the BRICS countries' governments and regulatory agencies have undertaken various initiatives to enhance the adoption of FinTech and to develop a robust, responsible, and enabling digital financial ecosystem, and establish an

													enabling regulatory environment to support consumer and data protection.
A Study on Digital Wallet Payment Option and Its Impact on Business Performance of Retailers in Chennai (Mohana Priya M, 2021)	Research paper		✓		✓		✓	✓	✓			✓	Retailers use digital payment for the acceptance of payment from their customers; awareness level about digital payment options in the case of plastic money is 100% among the retailers, but they do not have adequate information about the Aadhaar-enabled payment system
Drivers and inhibitors for digital payment adoption using the Cashless Society Readiness-Adoption model in Malaysia (Vimala Balakrishnan, 2021)	Research Article	✓	✓			✓	✓	✓	✓				The study's conclusions showed that while perceived readiness has no direct impact on adoption of digital payment systems, users' readiness to become cashless is directly influenced by aspects including ease of use, usefulness, innovation, optimism, and lack of awareness.
A Study of M-Wallet Adoption in Indonesia (Eskasari Putri, Aflit Nuryulia Praswati, Nalal Muna, 2022)	Research Article		✓			✓		✓				✓	In the study, it was found that perceived value and infrastructure significantly affect financial transactions. However, it was also found from the study that there is no impact of business pressure or financial transformation on the performance of small and medium enterprises.
Determinants Factors of Digital Financial Services Adoption and Usage Level: Empirical Evidence from Ghana (Isaac Anane Fengying Nie, 2022)	Research paper	✓				✓							The authors used a logit model to study the relationship between digital financial services adoption and various factors such as awareness, facilitative conditions, transaction cost, effort expectancy, security, and privacy and found that all these factors have a positive impact on digital financial services adoption.

Does mobile payment use lead to overspending? The moderating role of financial knowledge (Ahn, Nam, 2022)	Review Article			✓							✓		In the study, National Financial Capability Study (NFCS) 2018 data was used to investigate how the usage of mobile payments impacts financial behaviour, especially overspending behaviour. Mostly, three aspects of overspending behaviour, such as consumption, money management, and credit card behaviour, have been focused on, and the result of the study showed that individuals who use mobile payment had a greater chance of overspending than people who do not.
Adoption of digital financial transactions: A review of literature and future research agenda (Kajol et al, 2022)	Review Article	✓	✓		✓						✓		An article is based on empirical studies. In the study, the challenges of adoption of digital financial technology are identified, which include perceived danger, cost of use, and unwillingness to change, complexity, and privacy concerns.
Factors Influencing adoption and customer satisfaction of M- banking Apps in India (Tater et al, 2023)	Research Article	✓	✓		✓							✓	Security and privacy, communication and responsiveness, dependability and usability, trust and openness are several important factors influencing the usage and adoption of mobile banking apps.

2.5 Research Gap

The last few years have seen a rapid rise in digital financial services adoption by the customer and the provider due to the digital transformation in the financial sector, and the focus of researchers has shifted towards studying all aspects of digital finance. Many research studies have been done on studying the various concepts related to digital finance, like the overview of digital financial services in India, the study of digital finance and its impact on financial inclusion, using digital financial services to enhance women's financial inclusion, etc. Some of the studies have also been done on the adoption of digital financial services; Adoption of digital financial services in service sector organizations **(Shailesh Ramratan Vaishnav,2020);** digital banking adoption in India **(S.J. Syed Ashiq,2020);** and the impact of mobile money on the savings behavior of the financially excluded **(Jacqueline Mawende Skogqvist,2019).** After a detailed review of many articles, it is acknowledged that digital financial services adoption has several benefits for customers, providers, the government, and the economy. Digital financial services help customers satisfy their financial needs and also provide solutions for their financial issues, allowing them to make their financial decisions independently.While previous researchers have made significant contributions to studying the adoption of digital payments, mobile payments, and mobile banking, it was found that no study focused on the adoption of all aspects of digital finance, such as internet banking and mobile banking, digital banking, debit and credit cards, and their impact on the investment and borrowing behaviors of users. However, in the Indian context, very few studies have focused on the impact of mobile banking on the savings and spending behaviors of users. Thus, this study aims to close that gap by studying the adoption of digital financial services and their impact on financial behaviour. In this study, the researcher will try to find out the variables affecting the adoption of digital financial services and the impact of the adoption of digital finance on financial behaviour.

Section 3: Conceptual Framework

A conceptual framework has been prepared for this research. This includes some of the factors affecting digital financial service adoption as well as how digital financial service adoption affects user financial behavior such as saving, investing, insurance, borrowing, and spending. Thus, the hypothesis is formulated based on this framework.

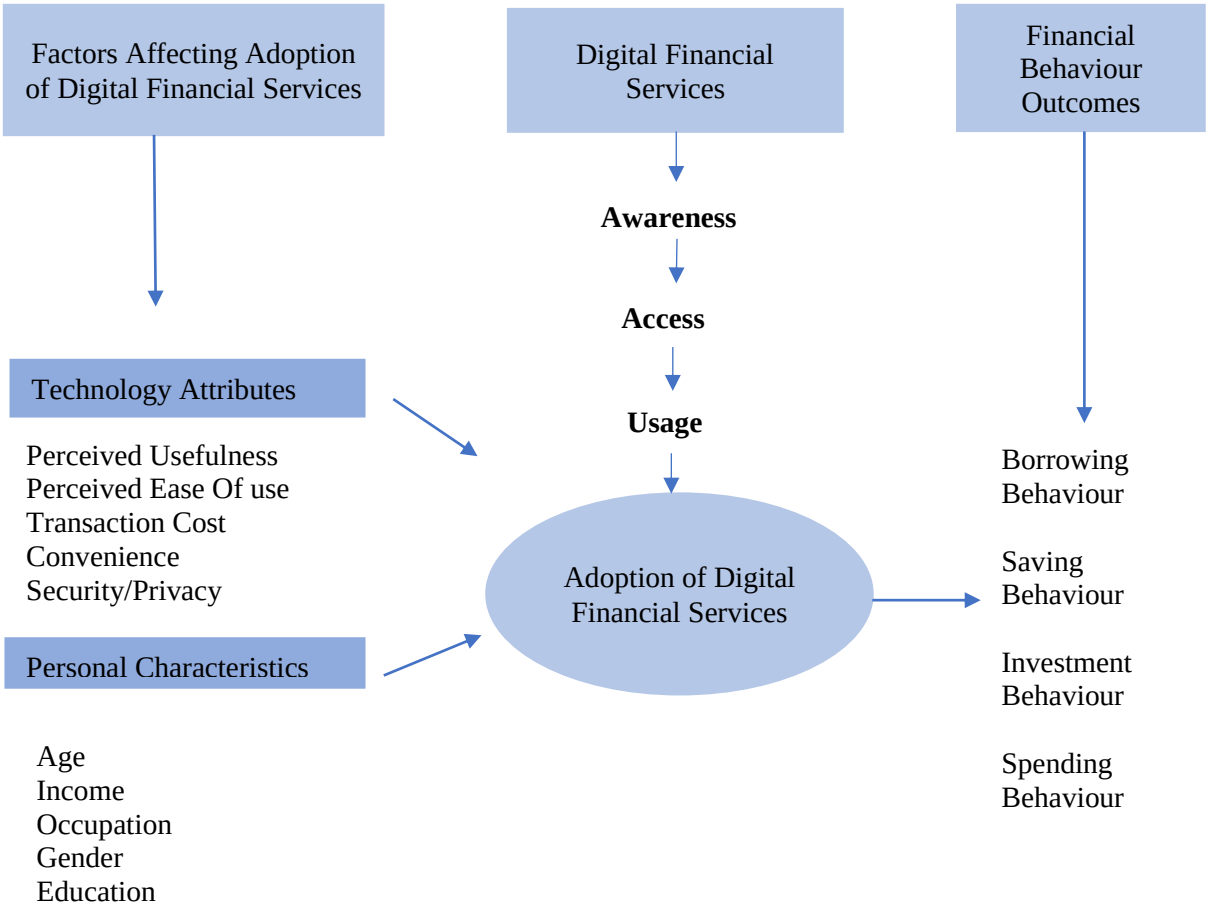

Figure 2. Source: Researcher's Own Construction

3.1 Research Questions

Based on the review of literature following questions are proposed for the research:

- What are the factors affecting the users' adoption of digital financial services?
- How does the adoption of digital financial services affect the financial behaviour of the users?
- Does the adoption of mobile banking, internet banking, and payments cards affect the users' saving behaviour?
- Does the adoption of mobile banking, internet banking, and payments cards affect the users' investment behaviour?
- Does the adoption of mobile banking, internet banking, and payments cards affect the users' borrowing behaviour?

3.2 Research Objectives

The proposed study has the following major objectives:

- To Identify the various factors affecting the adoption of digital financial services by users.
- To Identify the different stages of adoption of digital financial services by users.
- To determine the impact of adoption of digital financial services on financial behaviour of users

3.3 Hypothesis

$H_0$1: There is no Impact of adoption of digital financial services on the savings behaviour of the users.

H_a1: There is Impact of adoption of digital financial services on the savings behaviour of the users.

$H_0$2: There is no Impact of adoption of digital financial services on the investment behaviour of the users.

H_a2: There is Impact of adoption of digital financial services on the investment behaviour of the users.

$H_0$3: There is no Impact of adoption of digital financial services on the borrowing behaviour of the users.

H_a3: There is Impact of adoption of digital financial services on the borrowing behaviour of the users.

$H_0$4: There is no Impact of adoption of digital financial services on the spending behaviour of the users.

H_a4: There is Impact of adoption of digital financial services on the spending behaviour of the users.

3.4 Dependent Variables

Dependent variables such as saving, investing, borrowing, and spending behaviour are included in the present study.

3.5 Independent Variables

Independent variables: all digital financial services, such as mobile banking, internet banking, and credit and debit cards, are included in the present study.

Section 4- An Overview of Proposed Research

4.1 Need of the Study

According to a McKinsey & Company report from 2016, 2 billion individuals and 200 million businesses in emerging economies currently lack access to savings and credit. 230 million Indian adults are without access to formal banking services in developing countries such as India (Global Findex Database 2021), and approximately 190 million Indian adults still do not have a bank account (World bank 2020). In developing countries like India, where individuals earn irregular sources of income and are casually employed, providing them with formal financial services through traditional channels is

costly and time-consuming. In addition, all the minimum requirements for opening and maintaining a bank account make it difficult for individuals, especially low-income groups, to have a bank account and thereby limit their savings and investment options, which hinder the inclusive growth of the nation. Thus, the rapid spread of digital financial services is a simple and effective way to address these issues. Digital finance provides benefits to individuals, governments, providers, and businesses. Digital finance provides access to financial services for 1.6 billion people and could increase the amount of credit extended to individuals and businesses by up to $2.1 trillion (McKinsey Report, 2016). This allows the government to save 110 billion per year by reducing leakages in spending and tax revenue. financial services providers to save $400 billion annually in direct costs. The adoption of digital finance allows individuals to more easily access low-cost financial services, helping the casually employed and low-income earners access basic formal financial services. Digital finance allows the employed person to save and invest their extra income more easily without going to the bank, thereby saving their time, and they can invest their time to earn income from other sources. Which increases financial inclusion and contribute to national economic development. Adoption of digital financial services is beneficial for various groups of people. It provides formal financial services to individuals in digital mode, such as savings, loans, insurance, remittances, lending, and investments. As a result, greater ease of availability and access to such financial services for individuals affects their savings, investments, spending, payment habits, etc.; Hence there is a need to study how the adoption and use of all such formal financial services in digital mode reflects the financial behaviour of individuals.

Section 5: Methodology of Proposed Research

5.1 Scope of the Study

Area of survey: Agra District

5.2 Research Design

Nature of the study

The design of the study is descriptive in nature. A descriptive research design will be employed to study how the usage of digital financial services such as internet banking, mobile banking, and debit and credit cards has an impact on the financial behaviour of users. The method is useful because the purpose of this study is to discover the relationship between the adoption of digital financial services and the

financial behaviour of users.

5.3 Sample Design

5.3.1 Total Population

Total population of Agra District is 44,18,797 (As per Census 2011 report). Both the Urban and Rural populations of the Agra District will be considered as the total population. The total Urban Population of the Agra District is 20,24,195, and the total Rural Population of the Agra District is 23,94,602.

5.3.2 Target Population

Customers of digital financial services in the age group of 18 to 60 years in the urban and rural population of the Agra district

Table 2: Total Urban and Rural Population of the Agra District

Category	**Total Population of the Agra District**	**Target Population of the Agra District**	
		Age Group Young Adults	Age Group Mature Adults
Total Population	44,18,797	**18 to 35**	**36 to 60**
Rural Population	**23,94,602**	6,99,457	**4,62,843**
Urban Population	**20,24,195**	6,69,211	4,62,992

(Source: DDW-0900C-13 Census 2011)

5.3.3 Sample Size

For this research the sample size is calculated by using the (Bill Godden) Formula. The formula for sample size calculation is given below.

$$\boldsymbol{SS = \frac{z2 \times p(1-p)}{m2}} \ (\boldsymbol{where\ the\ population\ size\ is\ greater\ than\ 50,000})$$

Where Z= standard normal deviation set at 95% confidence level z value at 95%=1.96 and Margin of Error taken as 5% (0.05) and p is sample proportion or as estimated proportion of an attribute that is present in the population (50%) 0.5, researcher found a sample size as 384 units.

5.3.4 Sampling Technique

In the study, multistage sampling and purposive sampling will be used. The first level of sampling involves multistage sampling, which will be used to identify the target population. In this sampling technique, the population of the Agra district will be divided into urban and rural areas, and within these areas, the target population will be selected based on age group. The second level of sampling involves purposive sampling, which will be used to collect data from respondents who use digital financial

services in a specific location. Purposive sampling, also referred to as judgmental sampling, will be used to collect data from the respondents.

5.4 Data Collection Instruments

5.4.1 Primary Data

Primary data will be collected through a questionnaire to determine the impact of the adoption of digital financial services on the financial behaviour of the users.

Instruments: Questionnaire

Scale: Nominal scale

5.4.2 Secondary Data

Secondary data will be collected through various magazines, journals, newspapers, websites and annual reports.

5.5 Statistical Techniques for Data Analysis

5.5.1 Correlation

A correlation test will be used to find out the relationship between dependent and independent variables.

5.5.2 Z-test

The z-test will be used to identify the different stages of adoption of digital financial services.

5.5.3 Confirmatory Factor Analysis

The existence of a relationship between the identified factors and variables will be verified using the CFA test.

5.5.4 Structural Equation Modeling (SEM)

To verify the contextual framework, structural equation modelling will be used.

Section 6: PROPOSED CHAPTERIZATION

The proposed research will contain the following chapters:

- Chapter1: Introduction
- Chapter2: Review of literature
- Chapter3: Research design and methodology
- Chapter4: Data collection and analysis

- Chapter5: Results and interpretations
- Chapter 6: Conclusion
- Bibliography and references
- Appendix

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